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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ADDY, ANTHONY S	
ART UNIT	**PAPER NUMBER**
2617	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/28/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/500,492	SUN ET AL.	
	Examiner	Art Unit	
	Anthony S. Addy	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-6,8-13,15,16,18,19,21 and 27-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4-6, 8-13, 15, 16, 18, 19, 21 and 27-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to applicant's amendment filed on October 03, 2006. **Claims 1, 4-6, 8-13, 15, 16, 18, 19, 21** and **27-38** are pending in the present application.

Response to Arguments

2. Applicant's arguments with respect to **claims 1, 4-6, 8-13, 15, 16, 18, 19, 21** and **27-38** have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 4-6, 8-13, 15, 16, 18, 19, 21 and 27-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bridgelall, U.S. Patent Number 7,039,027 (hereinafter Bridgelall)** and further in view of **Schilling et al, U.S. Patent Number 6,314,126 (hereinafter Schilling)**.

Regarding claims 1 and 4, Bridgelall teaches a combined long and short distance wireless communication system (see col. 2, lines 66-67, col. 4, lines 38-42 and Fig. 1 [i.e. Wireless Wide Area Network (WWAN) 102, Wireless Local Area Network (WLAN) 104 and Wireless Personal Assistant Network (WPAN) 106 reads on a long and short distance wireless communication system]) comprising: a dual distance terminal for providing subscribers with long and short distance communication services (see col. 3,

lines 10-15, col. 10, line 50 through col. 11, line 7 and Fig. 9); at least one remote distance base station for providing remote distance wireless access for said dual distance terminal (see col. 5, line 61 through col. 6, line 11 and Fig. 2; shows base stations 226, 228 & 230 for providing distance wireless access for dual mode radio 242); at least one short distance access point (AP) for providing short distance wireless access for said dual distance terminal (see col. 5, lines 49-51, col. 6, lines 7-9 and Fig. 2; shows an access point 202 for providing short distance wireless access for dual mode radio 242); and a dual distance network server for connecting said at least one remote distance base station and said at least one short distance AP to execute network switching for said dual distance terminal and enabling said dual distance terminal to access the network to which it is switched (see col. 2, line 66 through col. 3, line 32, col. 16, lines 38-45, col. 11, lines 20-33 and Fig. 2); a data service function entity for detecting whether or not the occurrence of a long and short distance data transmission is, if it is, then providing a connection service for said data transmission (see col. 3, lines 19-32, col. 3, lines 54-59, col. 8, line 57 through col. 9, line 23 and col. 9, line 63 through col. 10, line 3); a dual distance home server for registering the dual distance communication parameters of the dominated dual distance terminals, obtaining network switch information via said data service function entity in the case where dual distance switch occurs, updating data of the dual distance terminal, and informing said data service function entity of dual distance terminal information when a query regarding the terminal exists (see col. 5, line 48 through col. 6, line 6); and an external network

interface unit for connecting dual distance network and an interface of an external network (see col. 3, lines 15-18, col. 5, lines 23-39 and col. 5, lines 48-63).

Bridgelall fails to explicitly teach storing data that may be missed during switching and sending the stored data to said dual distance terminal after said terminal switching is completed.

In an analogous field of endeavor, Schilling teaches that to avoid loss of data during handoff, the data that might be lost during handoff is stored by a base station, and when handoff is complete, the stored data can be transmitted at an increased data rate and increased power level to a remote station involved in the handoff (see col. 1, lines 27-37).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Schilling in the system of Bridgelall to include storing data that may be missed during switching and sending the stored data to said dual distance terminal after said terminal switching is completed, in order to prevent the loss of data during handoff as per the teachings of Schilling (see col. 1, lines 27-37).

Regarding claim 5, Bridgelall in view of Schilling teaches all the limitations of claim 4. Bridgelall further teaches wherein said external network interface comprises a wireless interface, an interface for wire network, and an interface for other wireless networks (see col. 3, lines 15-18, col. 5, lines 23-39 and col. 5, lines 48-63).

Regarding claim 6, Bridgelall in view of Schilling teaches all the limitations of claim 1. Bridgelall further teaches a dual distance terminal used for a combined long

and short distance wireless communication system (see col. 3, lines 10-15, col. 10, line 50 through col. 11, line 7 and Fig. 9), comprising: a short distance communication function entity having a short distance radio frequency function module for functioning as physical layer, part of MAC layer or link layer and operating in a short distance communication network to obtain data information (see col. 10, line 54 through col. 11, line 3 and Fig. 9; shows a WLAN radio section 902 [i.e. reads on a short distance communication function entity]); a long distance communication function entity having a long distance radio frequency function module for functioning as physical layer and part of link layer (see col. 11, lines 4-7 and Fig. 9; shows a WWAN radio 924 [i.e. reads on a long distance communication function entity]); a network switch condition judging function entity for performing network switching for the dual distance terminal based on the dual distance switch condition and instructing the short distance communication function entity or the long distance communication function entity to send a beacon signal to the dual distance network server (see col. 2, line 66 through col. 3, line 59, col. 4, lines 45-54 and col. 10, lines 50-66); a data management and buffering function entity for storing data that may be missed during switching and sending the stored data to a common function entity in the high level of the dual distance terminal after said network switching is completed (see col. 10, line 50 through col. 11, line 17 and Fig. 9); and a common function entity for implementing display, input and output functions of the terminal (see col. 10, lines 54-58, col. 11, lines 1-3 and Fig. 9).

Regarding claim 8, Bridgelall discloses a wireless communication method using combined long and short distance wireless communication systems (see col. 1, lines

25-31, col. 4, lines 38-42 and Fig. 1 [i.e. Wireless Wide Area Network (WWAN) 102, Wireless Local Area Network (WLAN) 104 and Wireless Personal Assistant Network (WPAN) 106 reads on a long and short distance wireless communication systems]), comprising steps: detecting a dual distance terminal to determine whether it is located in a service area covered by a short distance access point (see col. 8, line 57 through col. 9, line 9 and col. 13, lines 20-37); entering a short distance communication network through the short distance access point in the case where the dual distance terminal is located within the service area covered by the short distance access point, and informing a dual distance home server of the position of the dual distance terminal (see col. 8, line 57 through col. 9, line 9, col. 13, lines 20-49 and Fig. 12); searching for a base station for a long distance communication service if the dual distance terminal is not located in the area covered by any one of the short distance access points, entering a long distance communication network through a base station for a long distance communication service, and informing the dual distance home server of the position of the dual distance terminal (see col. 8, line 57 through col. 9, line 9, col. 14, lines 23-51 and Fig. 13); and switching between a long distance communication network and a short distance communication network when the dual distance terminal enters the short distance network service area from the long distance network service area, or enters the long distance network service area from the short distance network service area (see col. 13, lines 20-49, col. 14, lines 20-65 and Figs. 12 & 13).

Bridgelall fails to explicitly teach storing data that may be missed during switching, and sending the stored data to a dual distance terminal via said data service

function entity after said network switching is completed.

In an analogous field of endeavor, Schilling teaches that to avoid loss of data during handoff, the data that might be lost during handoff is stored by a base station, and when handoff is complete, the stored data can be transmitted at an increased data rate and increased power level to a remote station involved in the handoff (see col. 1, lines 27-37).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Schilling in the system of Bridgelall to include storing data that may be missed during switching and sending the stored data to said dual distance terminal after said terminal switching is completed, in order to prevent the loss of data during handoff as per the teachings of Schilling (see col. 1, lines 27-37).

Regarding claim 9, Bridgelall in view of Schilling teaches all the limitations of claim 8. Bridgelall further teaches a method, further comprising the step of when the dual distance terminal detects that a wireless local area network (WLAN) exists in the short distance network, the dual distance terminal then accesses the WLAN network; the dual distance terminal continues the detection and enters into the long distance network in the case where the entrance into the WALN network is unsuccessful (see col. 8, line 57 through col. 9, line 9, col. 9, lines 43-53 and col. 14, lines 23-51).

Regarding claim 10, Bridgelall in view of Schilling teaches all the limitations of claim 9. Bridgelall further teaches a method, further comprising the step of the dual distance terminal performs data transmission by accessing the dual distance server via

the short distance WLAN network in the case where the dual distance terminal enters into the short distance WLAN network (see col. 9, lines 43-53).

Regarding claim 11, Bridgelall in view of Schilling teaches all the limitations of claim 9. Bridgelall further teaches a method, further comprising the step of the dual distance terminal terminates data transmission through a short distance radio frequency function entity and activates a long distance communication function entity and performs the sequent data transmission if a predetermined threshold for the switching is satisfied during the dual distance terminal moves out of the short distance WLAN network and enters into the long distance network so that network switch is completed (see col. 14, line 23 through col. 15, line 19 and Fig. 13).

Regarding claim 12, Bridgelall in view of Schilling teaches all the limitations of claim 11. Bridgelall further teaches a method, wherein the predetermined threshold of the switching is a non-usable threshold of a short distance network signal or a non-optimal threshold of a short distance network signal (see col. 14, lines 23-38).

Regarding claim 13, Bridgelall in view of Schilling teaches all the limitations of claim 11. Bridgelall further teaches a method, further comprises the steps of in the case where the dual distance terminal requests seamless switching from the short distance network to the long distance network based on its service level, the dual distance terminal terminates data transmission through the short distance radio frequency function entity the dual distance terminal and sends a beacon signal to the short distance AP from which is switched through the short distance communication function entity in the terminal (see col. 14, lines 23-38), the beacon signal is then transmitted to

the dual distance network server by the short distance AP, the dual distance network server informs the long distance communication function entity to be accessed by the dual distance terminal of the receipt, and determines the service queue position which the dual distance terminal is arranged in the long distance network function entity based on its service level (see col. 14, line 38 through col. 15, line 19).

Regarding claim 15, Bridgelall in view of Schilling teaches all the limitations of claim 8. Bridgelall further teaches a method, further comprise the step of the dual distance terminal terminates data transmission through a long distance radio frequency function entity and activates a short distance communication function entity and performs the sequent data transmission if a predetermined threshold for the switching is satisfied during the dual distance terminal moves out of the long distance WLAN network and enters into the short distance network so that network switch is completed (see col. 13, line 20 through col. 14, line 23 and Fig. 12).

Regarding claim 16, Bridgelall in view of Schilling teaches all the limitations of claim 15. Bridgelall further teaches a method, further comprises the steps of in the case where the dual distance terminal requests seamless switching from the long distance network to the short distance WLAN network based on its service level, the dual distance terminal terminates data transmission through the long distance radio frequency function entity and sends a beacon signal to the long distance network function entity from which is switched through the long distance communication function entity in the terminal, the beacon signal is then transmitted to the dual distance network server by the lone distance communication function entity, the dual distance network

server informs the short distance communication function entity to be accessed by the dual distance terminal of the receipt, and determines the service queue position which the dual distance terminal is arranged in the short distance network function entity based on its service level (see col. 13, line 20 through col. 14, line 23 and Fig. 12).

Regarding claim 28, Bridgelall in view of Schilling teaches all the limitations of claim 15. Bridgelall further teaches a method, wherein when the dual distance terminal located in the long distance network requests to enter any one of the service areas covered by the short distance access points, and the dual distance terminal can not access the short distance network, then the dual distance terminal still operates the long distance communication (see col. 4, lines 38-65, col. 15, line 43 through col. 16, line 6 and col. 14, line 23 through col. 15, line 20).

Regarding claim 18, Bridgelall in view of Schilling teaches all the limitations of claim 9. Bridgelall further teaches a method, further comprises the step of when the dual distance terminal moves from one short distance cell to another short distance cell, the dual distance terminal identifies the short distance access point to which it enters, and sends the cell information to the dual distance network server to perform the switching between the short distance cells (see col. 4, line 38 through col. 5, line 3, col. 6, lines 7-19 and Fig. 1).

Regarding claim 19, Bridgelall in view of Schilling teaches all the limitations of claim 18. Bridgelall further teaches a method, further comprises when the dual distance terminal moves from one short distance cell to another short distance cell, the dual distance terminal informs the home server among the dual distance network servers

that it has already entered in said another short distance cell, and the home server manages the query and communication to it from the other terminals in the network (see col. 2, line 66 through col. 3, line 59, col. 4, line 38 through col. 5, line 3, col. 6, lines 7-19 and Fig. 1).

Regarding claim 27, Bridgelall in view of Schilling teaches all the limitations of claim 8. Bridgelall further teaches a method, wherein the process of the dual distance server cooperating with the dual distance terminal to perform the switch comprises: first step: detecting the dual distance beacon signal of the dual distance terminal by the long (or short) distance network function entity to determine whether or not a switching occurs (see col. 3, lines 19-32, col. 3, lines 54-59, col. 8, line 57 through col. 9, line 23 and col. 9, line 63 through col. 10, line 3); second step: updating the subscriber information registered in the dual distance home register (see col. 5, lines 48-59); third step: determining whether or not data transmission occurs, if it is not, the flow process returns to the first step (see col. 3, lines 19-32 and col. 14, lines 23-37); fourth step: determining whether or not there exists a need for seamless switching, if it is not, the process returns to the first step (see col. 3, lines 19-32 and col. 14, lines 23-37); fifth step: buffering the transmitted data, and forwarding the buffered data to the dual distance terminal after the switch is completed (see col. 3, lines 44-59, col. 14, lines 20-23 and col. 15, lines 18-19).

Regarding claim 29, Bridgelall in view of Schilling teaches all the limitations of claim 8. Bridgelall further teaches a method, wherein the subscriber defines the priority levels of the switching in advance as desired so that the dual distance terminal performs

automatic switching (see col. 4, lines 40-65, col. 13, lines 20-26, col. 14, lines 23-37 and col. 15, line 62 through col. 16, line 6).

Regarding claim 30, Bridgelall in view of Schilling teaches all the limitations of claim 8. Bridgelall further teaches a method, wherein said step of detecting a dual distance terminal to determine whether it is located in a service area covered by a short distance access point further comprises: the dual distance terminal keeps the long distance and the short distance radio frequency entity in operating state, and detects the long distance or short distance communication network environment in real-time, feeds the detected results back to the dual distance terminal switching management mechanism, reports the detected results to the dual distance network server through the existing network periodically or as desired (see col. 3, lines 19-32 and col. 8, line 57 through col. 9, line 23).

Regarding claim 31, Bridgelall in view of Schilling teaches all the limitations of claim 8. Bridgelall further teaches a method, wherein said step of detecting a dual distance terminal to determine whether it is located in a service area covered by a short distance access point further comprises: the dual distance terminal keeps the radio frequency function entity corresponding to the network in which it locates in operating state, and activates the radio frequency function entities for the other networks periodically or non-periodically to detect the candidate networks (see col. 3, lines 19-32 and col. 8, line 57 through col. 9, line 23).

Regarding claim 21, Bridgelall in view of Schilling teaches all the limitations of claim 31. Bridgelall further teaches a method, wherein the detection for candidate

networks with non-periodically activating the corresponding radio frequency function entity is carried out by using a viable-step detection method which the time interval of finally finding the occurrence of other networks is used as a function (see col. 8, line 57 through col. 9, line 23).

Regarding claim 32, Bridgelall in view of Schilling teaches all the limitations of claim 8. Bridgelall further teaches a method, wherein said step of detecting a dual distance terminal to determine whether it is located in a service area covered by a short distance access point further comprises: the dual distance terminal keeps the radio frequency function entity corresponding to the network in which it locates in operating state, and does not detect the other networks until the existing network is not available (see col. 3, lines 19-37 and col. 14, lines 23-37).

Regarding claim 33, Bridgelall in view of Schilling teaches all the limitations of claim 8. Bridgelall further teaches a method, wherein said predetermined conditions for the switching refers to switch the dual distance terminal to a network with higher priority level in the case where the network with higher priority level exists (see col. 13, lines 20-26, col. 4, lines 38-65, col. 14, lines 23-37 and col. 15, line 43 through col. 16, line 6).

Regarding claim 34, Bridgelall in view of Schilling teaches all the limitations of claim 8. Bridgelall further teaches a method, wherein said predetermined conditions for the switching refers to switch dual distance terminal to other networks only when the currently used wireless network signals can not be received (see col. 3, lines 19-37 and col. 14, lines 23-37).

Regarding claim 35, Bridgelall in view of Schilling teaches all the limitations of claim 11. Bridgelall further teaches a method, wherein said predetermined conditions for the switching refers to switch the dual distance terminal to a network with higher priority level in the case where the network with higher priority level exists (see col. 13, lines 20-26, col. 4, lines 38-65, col. 14, lines 23-37 and col. 15, line 43 through col. 16, line 6).

Regarding claim 36, Bridgelall in view of Schilling teaches all the limitations of claim 11. Bridgelall further teaches a method, wherein said predetermined conditions for the switching refers to switch dual distance terminal to other networks only when the currently used wireless network signals can not be received (see col. 3, lines 19-37 and col. 14, lines 23-37).

Regarding claim 37, Bridgelall in view of Schilling teaches all the limitations of claim 13. Bridgelall further teaches a method, wherein said predetermined conditions for the switching refers to switch the dual distance terminal to a network with higher priority level in the case where the network with higher priority level exists (see col. 13, lines 20-26, col. 4, lines 38-65 and col. 14, lines 23-37).

Regarding claim 38, Bridgelall in view of Schilling teaches all the limitations of claim 13. Bridgelall further teaches a method, wherein said predetermined conditions for the switching refers to switch dual distance terminal to other networks only when the currently used wireless network signals can not be received (see col. 3, lines 19-37 and col. 14, lines 23-37).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yuen, U.S. Patent Number 7,020,184 discloses store and forward handoff.

Karagiannis et al., U.S. Publication Number 2003/0018810 A1 discloses seamless handoff in mobile IP.

Kim et al., U.S. Publication Number 2004/0152417 discloses short-range wireless communication system and a handoff processing method therefor.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony S. Addy whose telephone number is 571-272-7795. The examiner can normally be reached on Mon-Thur 8:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc M. Nguyen can be reached on 571-272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A.S.A

CHARLES APPIAH
PRIMARY EXAMINER